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New Plants from New Mexico.—III.

By E. O. WOOTON.

COMMELINA CRISPA.

Much branched, perennial by tuberous roots (erect when young, lower part of stem prostrate, upper erect in age): stems often 5–8 dm. long, finely villous-pubescent above, especially on stems near the nodes, becoming glabrous below: leaves linear-lanceolate, 3–7 cm. long, 4–6 mm. wide, pubescent with small scattering hairs on both surfaces, acuminate, crispate, slightly contracted at the base; ochrea 12–15 mm. long, membranous, closed all the way up, supplied with several white bristly hairs on the margin at the mouth of its tube; spathe much the shape of that of *C. Virginica* L. but slightly shorter, a little broader and the sides more curved, 1.5–2 cm. long, 1 cm. broad, acute, decurrent into a peduncle 5–8 mm. long, pubescent and also bearing some weakly hispid rather long white hairs at the base, generally about 3-flowered: sepals all broadly elliptical-rotund, the upper one slightly narrower than the others (3 mm. long) and only about half as large: two upper petals broadly reniform, long-clawed, 1–1.5 cm. in diameter, very delicate in texture and finely veined, bright blue; claw 3–4 mm. long; third petal small, white, lanceolate, 2–3 mm. long: 3 fertile stamens with 7–9 mm. long filaments; 3 staminodia about half as long: style over 1 cm. long, loosely coiled upward: pod 3-celled and 3-seeded, glabrous, two of the cells dehiscent, the third indehiscent: seeds orbicular, slightly flattened, smooth.

Collected at the base of the Organ Mountains, Doña Ana Co., Sept. 1; altitude 4800 feet, no. 545. Much if not all the southwestern material which has been referred to *C. Virginica* belongs here. In reality this plant is more closely allied to *C. angustifolia* than to *C. Virginica*.

It is one of the common species of the Southwest, as is shown by the fact that it was collected by Pope's expedition and Marcy's and the Mexican Boundary Surveyors. Its range seems to be from the plains of western Nebraska and Kansas southward into Mexico, particularly in the arid region. I have found it growing only in loose rocky soil.

PHILADELPHUS ARGYROCALYX.

Branching shrub, 1-2 m. high, with slender branches, bark red-brown on the younger stems, shreddy on the older ones: leaves opposite, elliptical-ovate, 2-3.5 cm. long, 7-12 mm. broad, acute, contracted into a short petiole, glabrate above, appressed-pubescent and lighter green below, strongly 3-nerved, entire: flowers solitary, terminating short leafy branches, bright white, about 3 cm. in diameter: calyx-tube hemispherical, 3-5 mm. in diameter; limb 4-parted, segments ovate, acute, short-acuminate, 4-6 mm. long, the whole calyx with the peduncle densely silvery white, woolly over the outside and at the tips within; petals 4, obovate, retuse to obcordate: stamens numerous, of several lengths: anthers greenish: styles united; stigmas linear, slightly longer than styles; ovary perfectly glabrous: fruit a 4-celled coriaceous pod with numerous seeds, inclosed in the persistent woolly calyx.

Collected on Eagle Creek, in the White Mountains, Lincoln Co., Aug. 14, 1897, in fruit, no. 524, at an altitude of about 7000 feet. First collected in flower on Ruidoso Creek in the same mountains, June 30, 1895, at about the same altitude. Also collected at Fort Huachuca, Ariz., June, 1892, and July, 1893, by Dr. T. E. Wilcox.

It is most closely allied to *P. microphyllus* Gray, having about the same sized flowers and leaves, but is easily separated from that species by its calyx. In *P. microphyllus* the calyx is slightly pubescent at the base on the outside, but most of the tube and all the outside of the limb is perfectly glabrous. *P. serpyllifolius* Gray has the woolly calyx but its flowers and leaves are not one third the size of those of *P. argyrocalyx*.

LINUM VERNALL.

Annual or biennial (?) herb, 2-3 dm. high with numerous erect stems from a whitish perpendicular root about 1 dm. long: stems slightly curved at the base, branched above, terete, slightly striate, perfectly glabrous: leaves numerous and closely imbricated on the lower part of the stems, more scattered above, 7-18 mm. long, barely 1 mm. wide at the base, linear-subulate, obscurely 1-nerved, glabrous, bluish-green, lower entire, upper glandular-dentate; stipular glands very small and blackish: flowers numerous, borne on pedicels 5-15 mm. long and apparently opposite the leaves: sepals rather broadly lanceolate, 5-7 mm. long, 1.5-2 mm. wide, scarious-margined and glandular-dentate with numerous fine teeth,

subaristate, with one prominent central vein and two lateral ones, persistent in fruit: petals broadly obovate-cuneate, 12–15 mm. long, 10–12 mm. broad, golden yellow, with a brownish-red blotch at the base forming an “eye” to the flower, early deciduous and very delicate: stamens slightly shorter than the 7 mm. long almost completely united styles: capsule a little shorter than the sepals, ovoid; callus at base of proper septa very small, false septa hardly complete, thickened only a little at the very base.

My specimens of this plant come from a single locality—the base of a small mountain, generally called Tortugas, standing alone on the mesa about five miles east of Las Cruces, Doña Ana, Co. in dry soil. I collected it in flower Apr. 22, 1893, and several times about the same season at this place. A few specimens were taken there in fruit July 1, 1897, no. 589.

Thurber's no. 561 from El Paso, Texas, in bloom April, 1851, and labeled *L. rigidum* Pursh., M. E. Jones' no. 3721 from El Paso, Texas, April 17, 1884, also in flower and labeled *L. Boottii*. Planchon, as well as some Mexican Boundary specimens without data but labeled *L. Berlandieri* Hook., are all to be referred here

The flowers and habit show our plant to be related to *L. Berlandieri* and *L. multicaule*. It is separated from the former by narrow leaves, smaller and more numerous flowers, persistent sepals and very slightly thickened false septa. From *L. multicaule* it is distinguished by a more erect habit, more numerous flowers, leaves not crowded above, plant glabrous throughout and sepals glandular-dentate.

Our plant has possibly been included with *L. aristatum* Engelm. but can hardly belong there if Dr. Engelman's description of the plant is to be relied upon for our plant is rarely one foot high, has flowers which are not at all sulphur yellow and sepals which surpass the pod but a very little.

The fact that our plant seems to bloom in the spring, a season at which the other species of the genus of that section are not likely to be in flower, has been of especial interest and attention is called to the fact in the name now proposed.

MARTYNIA PARVIFLORA.

Coarse, rank-scented clammy viscid annual: stems decumbent, ascending at the ends, 1 m. or more long, branching at the base,

very viscid-glandular: leaves opposite, broadly ovate in general outline, obscurely 5-lobed, cordate, coarsely sinuate, obtuse; petiole 7-15 cm. long; blade in young plants 5-8 cm. long, 4-6 cm. broad, in well-developed plants the largest leaves frequently 2 dm. long and three-fourths as broad: flowers in racemes which are borne in the angle between the dichotomous branches; pedicels 1-2 cm. long, becoming longer and stouter and strongly reflexed in fruit: calyx bibracteolate, unequally 5-lobed, cleft to the base on the outer side, the inner segment being narrowest and longest, 12-14 mm. long, lobes rather obtuse, narrowly ovate to lanceolate, strongly veined and very glandular; bracts oblong-lanceolate, 6-7 mm. long: corolla constricted at the base, gaping though not so widely as in other southwestern species, 2.5-3 cm. long, dull cream yellow with a large purple blotch in upper side of the throat and spreading over the two upper lobes, 5-lobed, the upper and lateral reflexed, entire to repand; tube glandular-pubescent over the entire outside and somewhat so within the throat: stamens didynamous, the rudiment of the fifth only 1 mm. long; filaments glabrous except at the base where they are finely glandular: ovary finely glandular; style longer than the stamens; pistil 2-parted: fruit as in the nearly related species, 1 dm. long, including the strongly incurved beak, very glandular-viscid without, endocarp tough, woody; seeds irregularly flattened by crowding, 6-8 mm. long, black.

Collected at San Augustine Ranch at the base of the Organ Mountains, Doña Ana Co., August 30th; altitude 4500 feet, no. 580. I also collected it at Las Cruces, August 23, 1895. Thurber's no. 913 from Sonora, Mexico, September, 1851, and same number from Corralitas, Chihuahua, Mexico, August, 1852, should be referred here, as well as Dr. Mearns' no. 215 from Fort Verde, Arizona, September 14, 1887, and Wright's no. 429 (in Columbia Herbarium) without locality but probably from some place in Texas or Chihuahua near El Paso. This plant has been referred generally to *M. fragrans* Lindl. but it is easily separated from that species by its smaller, dull colored and less gaping corolla and narrower calyx-segments. I have confused it with *M. proboscidea* Glox. and it may be the plant Dr. Gray has in mind when extending the range of that species to New Mexico. Most herbarium material represent the plant but poorly, since it is only possible to press the tips of the branches with the smaller leaves or else collect only young plants which show only small leaves, thus

causing it to be considered with the smaller forms. I have seen a single well-grown plant which covered three to four square meters of ground with the tips of its stems 3-6 dm. above the ground.

ARTEMISIA MICROCEPHALA.

Perennial herb about 6 dm. high with several erect paniculately branching stems, whole plant flocculently white-tomentose: upper leaves linear- to narrowly oblong-lanceolate, 1-3 cm. long, 2-5 mm. broad, tapering both ways, entire, acute though occasionally 3-toothed at the apex, lower leaves often 3-5-lobed, 4-5 cm. long and 6-9 mm. broad: heads in a bracted terminal panicle, numerous, smaller than any in the group to which the plants belong, 3 mm. high and 2 mm. in diameter, 15-20-flowered: flowers very small, yellow, about half in each head with much reduced tubular corolla and pistillate, the others hermaphrodite and with normal tube: akenes glabrous and without pappus, about 1 mm. long.

Collected in the Organ Mountains, Doña Ana Co., September 1, no. 504, at an altitude of about 4800 feet and distributed as *A. gnaphalodes* Nutt. Also collected at Albuquerque, N. Mex., in the fall of 1894 by President C. L. Herrick of the New Mexico State University. These plants agree exactly with the specimen of Wright's no. 1276 in the Columbia Herbarium referred to by Dr. Gray as "a small leaved and very canescent form like Wright's no. 391"* but without giving locality of collection. It is probably from the mountains of southern New Mexico.

This plant is most nearly related to *A. gnaphalodes* Nutt. from which it may easily be separated by its more slender habit and its much smaller leaves and heads of flowers.

The following described plants, all but two of which are from New Mexico, may properly be published along with those preceding although not collected on the trip referred to above. The two Arizona plants will probably be found in New Mexico when all her plants are known.

SOPHIA OCHROLEUCA.

Erect branching annual herb 5-7 dm. high, the whole plant except the flowers and fruit finely tomentulose with soft branching hairs giving it a greenish-gray color: leaves alternate, 5-13 cm. long, 1.5-3 cm. broad, oblong in outline, tri-quadrifid, ultimate

* Pl. Wright. 2: 98.

mate segments small, 2-4 mm. long and half as broad, oblong-elliptic, obtuse : flowers in terminal racemes : sepals oblong, obtuse, purplish tinged without, glabrous, 1.5-2 mm. long : petals elliptic, short-clawed, 2.5-3 mm. long, cream white, sometimes a little purplish tinged : stamens tetradynamous, the longer of the length of the petals : ovary in flowers just opening oblong-cylindric as long as the stamens : stigma sessile : silique terete, 8-10 mm. long, tapering at base, obtuse, glabrous, valves strongly 1-nerved, replum very thin ; seeds in two rows in each cell, elliptical, yellow ; pedicels slightly shorter than the pod, ascending, the pod and pedicel in the same straight line making an angle of about 35 degrees with the rachis.

Collected at Mesilla Park, New Mexico, in April, 1897, by Prof. J. D. Tinsley.

This plant has no doubt been confused with various other western plants which have gone as *Sisymbrium canescens* Nutt., though I find no material of the species in the herbarium of Columbia University. It is easily separated from all other related species by the color of the flowers alone. From *S. pinnata* (Walt.) Britton it may be separated by its short ascending pedicels and pods and larger and more dissected leaves ; from *S. Hartwegiana* (Fourn.) Greene by its much more dissected leaves with elliptical segments and its stouter more obtuse pods.

PROSOPIS VELUTINA.

Spiny shrub (?) generally somewhat resembling *P. glandulosa* Torr. : stems terete, brownish, young parts velutinous ; stipular spines stout, not very numerous, 1-2 cm. long : leaves fascicled ; petiole 1-5 cm. long ; pinnae 1-2 pairs, about half the leaves having two pairs ; leaflets 12-19 pairs, elliptic-oblong, 7-10 mm. long, 2-4 mm. broad, obtuse, crowded, coriaceous, strongly veined, the whole leaf being finely velutinous even in age ; stipules small, subulate, yellow : flowers greenish-yellow, in cylindrical spikes 5-10 cm. long : calyx campanulate with 5 very short teeth, ciliate : petals 5, oblong, obtuse, very strongly ciliate within : stamens 10, distinct, exserted : pistil simple : fruit a stipitate pod, linear, 10-15 cm. long, flattened and compressed between the seeds, straight or falcate, very velutinous when young and pubescent even in age, indehiscent.

Probably first collected with young fruit in the valley of Nazas in northern (?) Mexico by Gregg, May 10, 1847, and labeled "Bolsonde Mapimi."

Collected also by Schott "between the Colorado and Santa Cruz River, Sonora," some time in the early fifties. Pringle's plants collected in Arizona on mesas and in valleys in flower, Apr. 23, 1881, and in fruit, August 3, 1884, belong here as well as the specimen collected by Dr. Wilcox at Fort Huachuca, Ariz., May, 1892.

The plant is of course closely related to *Prosopis glandulosa* Torr. but is easily distinguished from that species by its velvety pubescence on the leaves, fruit and all young parts and by the leaves with frequently two pairs of pinnae and small crowded leaflets.

PARRYELLA ROTUNDATA.

Low shrub, 6 dm. high or more, branching at the ground and spreading, young parts canescent, with appressed rather coarse white hairs, numerous sessile brown glands on all parts: leaves alternate, narrow, 10-12 cm. long, 7-10 mm. wide; leaflets about 25 pairs, broadly elliptical to rotund, obtuse or retuse, 1-6 mm. in longest diameter, the largest leaflets near the middle of the rachis, those at the tip exceedingly small; proper petiole short, only 3-5 mm. long; stipules about as long, narrowly lanceolate, deciduous: flowers inconspicuous in short terminal almost sessile crowded spikes, 1-2 cm. long, generally rather closely resembling the flowers of the other known species: bracts linear, two-thirds as long as calyx; calyx-tube angular, turbinate, very canescent and glandular, 2-3 mm. long; limb 5-parted, segments triangular, acute, densely hirsutulose within: corolla wanting: stamens 10, free, exserted, of unequal length; anthers similar: ovary elliptical, two-ovuled, and with the 4-5 mm. long style sparingly hirsute: fruit unknown.

Collected at a point about five miles north of Winslow, Ariz., June 29, 1892, in reddish soil.

It is easily separated from the only other known species of the genus by its rounded leaflets and its very glandular calyx. The exact size of the shrub will probably need correction, since I only saw one poorly developed individual.

PHACELIA INTERMEDIA.

Erect, branching, viscid, glandular and slightly hispidulous annual, 1-3 dm. high (generally about 1.5 to 2 dm.): stems terete, reddish tinged, quite glandular with a fine puberulence next the

stem and with scattering to thickly set hispidulous white hairs over the surface, the latter thicker on the inflorescence: leaves oblong-lanceolate in outline, 3-14 cm. long and .5-2 cm. broad, obtuse, crenately lobed and lobes coarsely crenate-toothed, short-petioled: flowers in terminal compound coiled helicoid cyme which uncoils as the fruit is produced; main peduncle 2-8 cm. long; pedicels 1 mm. long; sepals 5, spatulate, obtuse, 3 mm. long, very glandular and hispidulous: corolla funnelform, 5-6 mm. long, bright violet, lobes obovate-elliptical, subentire, spreading appendages at base of stamens attached for full length on side away from filament and for lower half their length on the other side to the base of filament and to each other, tips free, not enclosing the base of filament: stamens and pistil half as long again as corolla and exerted; style divided two thirds of its length, its base and the top of the ovary hispidulous: pod globose, slightly longer than the persistent sepals: seeds 4, elliptical, 2-3 mm. long, brown, not winged but strongly concave with a prominent ridge running lengthwise of the concave side, transversely rugose on concave side, finely pitted all over.

Collected on the mesa near Las Cruces, Doña Ana Co., N. Mex., April 10, 1893. President C. L. Herrick, of the University of New Mexico, collected the same species in the Florida Mts. near Deming, New Mexico, March 14, 1897, and in the Tres Hermanas Mts., March 20, the same year.

Dr. Rusby's plant from some place in New Mexico (label misplaced), some plants collected by Capt. E. K. Smith in Sonora (reported in the Bot. Mex. Bound. Surv. under *P. ciliata*), Wright's no. 1579 as represented in Columbia University herbarium, and Thurber's no. 11, in the same herbarium, from El Paso, March, 1851, should all be referred here. The species has been confused with *P. integrifolia* and *P. crenulata*, Dr. Gray modifying the original description of the latter species sufficiently to include it. Our plant is most like *P. crenulata* but is to be distinguished by its more numerous glands and noticeably less hispidulous character; its leaves have rounded lobes, not incised, its flowers are smaller with more nearly entire corolla-lobes and the seed is strongly transversely rugose.

ASTER (CONYZOPSIS) WOODHOUSEI.

Low spreading annual, 1 dm. high or less; stems terete, sparingly pubescent: leaves linear-oblongate, 1-2 cm. long, 1-3

mm. broad, sessile and somewhat clasping, obtuse, with minute hispidulous teeth along the margin, apex tipped with a short stiff hair: heads numerous, terminating short branches, 7-10 mm. high; involucre bracts fleshy, imbricated in about three rows, oblanceolate, 3-7 mm. long, 1 mm. or less broad, acute, the inner tinged purple at the tips; receptacle naked, alveolate: flowers numerous, rays fertile, in two or three rows, narrowly linear, inconspicuous, only exceeding the pappus by about 1 mm., purple (?); disk flowers narrowly tubular, expanded slightly at the top into a campanulate throat, the whole corolla shorter than and included in the sordid to tawny pappus: akenes 1-2 mm. long, slightly angled, narrowly turbinate, appressed-pubescent; pappus of numerous capillary, minutely scabrous bristles, about 6 mm. long.

First collected near the Pueblo Indian village of Zuni, in western New Mexico, by Dr. S. W. Woodhouse, in September, 1851. Again collected "in wet springs, eastern New Mexico,"* by Dr. Bigelow, in September, 1853. In the reports of both the above collections, Dr. Torrey referred the plant to *Aster angustatus* (Nutt.) T. & G. I have recently received specimens of the same plant collected by President C. L. Herrick, of the University of New Mexico, in the fall of 1894 at Albuquerque, New Mexico.

Our plant is most nearly related to *Aster frondosus* (Nutt.) T. & G., and is included in that by Dr. Gray in the Synoptical Flora. It is easily separated from that species by its decumbent habit, smaller size, smaller and less crowded heads and smaller, more pubescent leaves.

* Pacif. R. R. Rept. 4: 97. 1856.